



# A CASE STUDY ON THE IMPLEMENTATION OF INDUSTRY BASED ELECTIVES IN HIGHER LEVEL TECHNICAL EDUCATION

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## ABSTRACT

Even though more and more employment opportunities and new employment titles are blooming, and the demand for each and every product is flourishing, the employers find it difficult to recruit prosperous candidates. All the stake holders of higher level technical education system are taking keen interest to change this scenario by adopting new methodologies and procedures, but unfortunately the outcome of these activities were not found to be more efficient. How to bridge the skill gap between the great giants, Academia and Industry? We framed a new strategy called Industry Based Elective (IBE) which was focused in moldingskill based, industry-oriented, and industry-ready technocrats by providing tailor-made curriculum and hands on training to the students. The curriculum was framed in joint consultation with the respective industrialists, academicians, and governing bodies. The entire lecture sessions, practical demonstrations, and laboratory experiments were conducted by the industry experts including the evaluation procedures. The IBE opted students were given cent percent placement opportunity by the concern industries. The feedback received from such employers were found to be excellent and motivating factor to us as their new employees and ready to work in the real time environment from the first day onwards. We hope that by adopting and offering more numbers of IBEs, we can build a better future for both the industries, and the emerging engineers. More and more numbers of industries and academia should join hands together to implement this strategy for building a better India.

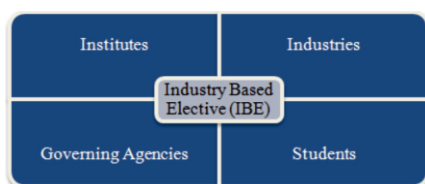
**KEYWORDS:** Technical Education, Industry Based Elective, Skill gap, and skill requirements.

## 1. Introduction

In the last twenty to twenty-five years, we can see the numbers of higher level institutions offering technical and engineering education are increasing abnormally. As per the recent surveys, government is also ready to open large number of educational institutions in the needy areas. More number of students are allowed to admit in the already existing colleges by means of increasing the intake strength. In some reputed colleges, students' strength is increased by means of conducting part-time, self-finance, and shift based courses. The main purpose of giving permission to such types of affiliations is to provide quality education to more people by utilizing the already existing facilities in the renowned colleges. And our government is also ready to approve very old colleges those proved themselves as Centre of Excellence by offering quality education to the society as deemed universities. Recent days our government is ready to give permission to foreign universities to start their study centers and extension centers. Apart from this some universities are offering courses through week-end, distance education, and on-line modules. So, getting a higher level technical education is made easy and affordable to all the people irrespective of their social status.

At the same time, more and more employment opportunities are blooming every day. In recent years, more numbers of new employment-titles are arising and the companies are very serious about creating new job-titles to prove themselves and maintain their survival. The demand for each and every product is flourishing irrespective of the cost, season, and usage, etc., because of the demand due to population, and the increased buying capacity of buyers. Hence the companies are giving more importance in the recruiting process as it has a direct impact on the business of any concern.

In India, around seven numbers of students are committing suicide daily only because of their inability to face the results of their examinations. This number includes both school and college level students. Especially in the Tamilnadu state alone around 853 students committed suicide in the year 2014. On the other hand, in the same state, approximately 86 members were committed suicide due to the unemployment problem only [1].



All the stake holders of the higher level education system are taking keen interest to change this kind of scenario by adopting variety of methodologies and procedures, but unfortunately the outcome of these activities were not found to be more efficient. How to build the gap between the two great peaks i.e., Academia

and Industry? It is becoming a million-dollar question even now. As we were also having the responsibility to solve this issue, we were intended to plan a new strategy i.e., Industry Based Elective (IBE) to solve the above issues. The IBE methodology thus devised was found to be more effective, efficient and fruitful for both the students and industries. The IBE methodology implemented is elaborated and explained in the following chapters of this article, with some real time situations what we experienced during the execution process.

## 2. Methodology

### 2.1 Stages of IBE system

The premeditated, advanced and successfully executed system called IBE methodology which is elucidated in this segment. The main accomplishment for this IBE system is the overall amalgamation and harmonization between industry governance agency, academia and chiefly students. The IBE system can be designated as a core of an institution for its efficacious persistence in this competitive realm.

As a technical institution every institution must conduct a SWOT scrutiny for their persistence in the future. Especially in Tamilnadu around 516 polytechnic colleges (as on December 2016) and 571 engineering colleges (as on July 2016) are in existence [2,3]. The new generation scholars who are very compatible with Hi-Fi chic systems and not ready to do manual work as preceding generation. They believe on working with smart system because of the tremendous development in the IT field. The customary old chalk and talk technique was found to be not curious and has no lure about the subjects as all the resources are accessible in the internet with good elucidations, animations, tutorials and with HD videos. The parents are very keen to educate their wards in the colleges nearby their hometown irrespective of quality of education. Because of the enormous market demand, most of the companies are involved to recruit their employees under apprentice act only. This leads to a big placement market for the emerging technocrats.

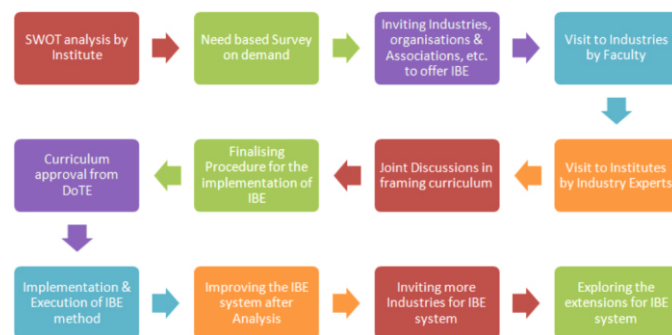


Fig.2.1 Progressive stages of the IBE model

On other hands most of the industries are ready to join hands with institutes which are preserving high standard in imparting technical education, in specific some of the reputed industry install their infrastructure in the college to provide devoted training to the students. They want to train the candidates during their academic agenda itself. so that they trainee will be equipped to occupy their position in the company without any surplus training in the industries. The industry very keen to afford tailor made platform in support with academia to gratify their own requirements. Since they are suffering very much because of the technocrats coming out of colleges without their required proficiency.

So we conducted the exhaustive survey regarding offering IBE in association with reputed industries throughout India. Based upon the analysis report we bidden some of the prominent industry, organization and association to visit our campus to have confab to offer IBE based upon their necessities. After the confab a group of faculty will visit the related industry to have clear idea about the working atmosphere, process involved, material handling system adopted, and safety norms followed, etc. After the visit once again a discussion will be held either in the industry or institution to finalize the Curriculum. Once the Curriculum was framed, it is submitted to the DoTE, Chennai for their endorsement. Curriculum will give a clear idea about the contents to be delivered, schedule and mode of presentations. After getting endorsement from government agency, the IBE systems is implemented and executed.

After the successful accomplishment of one batch of students, once again exhaustive analysis is carried out to improve the existing IBE system. A monitoring committee is framed and asked to evaluate the performance of the implemented IBE system. Then more and more number of industries are advanced to implement IBE based system. According to the needs of the industries and decree and regulations of the institute and demand in a market, the various extensions for the IBE system is explored.

## 2.2 Organization of the programme

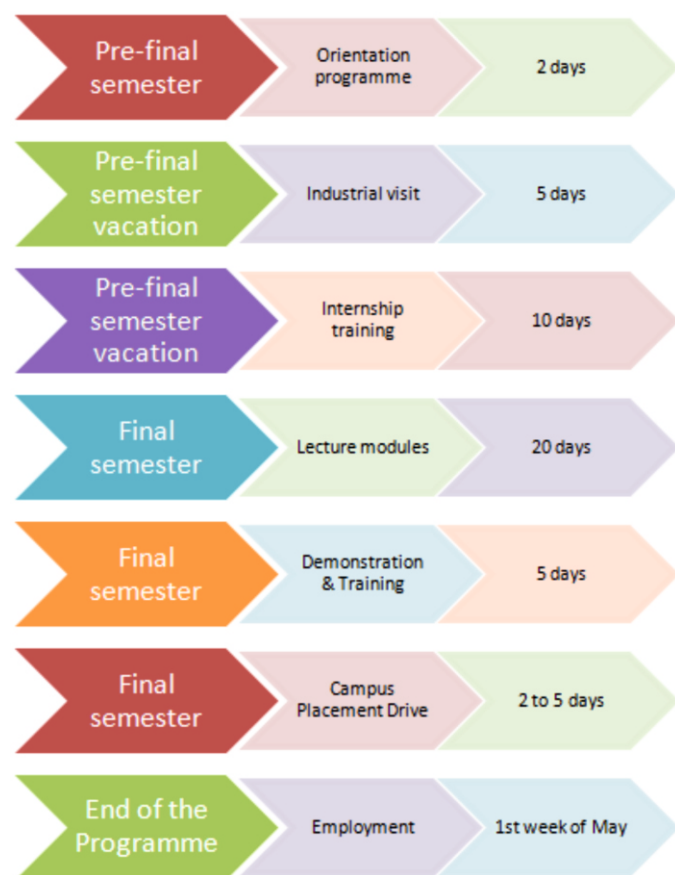


Fig.2.2 Organization of the programme

### 2.2.1. Orientation Programme:

During the second week of the September the IBE sponsored industries are bidden to the campus for the coordination programme. The program will be organized for two days. The company people will elucidate their company profile, curriculum, scope for these electives including placement opportunities. In the afternoon sessions, a written test will be conducted to evaluate the performance of the students both in technical and general subjects. In next day, the short listed students will be called for personal interview with the HR team. In the afternoon, the parents of the short listed students are bidden. The amenities and perks offered by the industry are briefly elucidated to them. A video conferencing discussion with their employees especially our college alumni is organised to make the students to be confident and to have a clear vision about undergoing IBE.



Fig.2.2.1 Photos taken during the Orientation Programmes

### 2.2.2. Industrial visits:

A five days' Industrial visits will be organised to the short listed students related to their IBE subjects. For Glass Processing Technology (GPT) IBE students, Glass manufacturing industries and Glass processing industries will be visited by the students in the five days. During Glass manufacturing industries visit, the students can see lively how the different types of glass is manufactured. During Glass processing industries visit, the students will observe the handling the glasses form glass manufacturing industry to glass processing industry, cutting, grinding, heat treatment and finishing the glasses to the customer requirements. They also know about the safety prospects followed by the industrial worker. For Building Facade Technology (BFT) IBE students, Aluminium panel manufacturing industries, construction sites, Glass manufacturing industries and Glass processing industries will be visited. During this visit, the students able to know how the aluminium frame manufacturing and erection of glass fitted with aluminium frame on the wall.



Fig.2.2.2 Photos taken during the Industrial Visits

### 2.2.3. Internship training:

The students selected for IBE will go to internship training for 10 days at any one of the above said industries during pre-final semester vacation. At this occasion, the students have hands on training in construction sites, testing laboratories at industry, building design and glass processing units. They got real exposure about products and real work environment.



Fig.2.2.3 Photos taken during the Internship Training sessions

### 2.2.4. Lecture modules:

In order to accommodate the resource persons from industry for the whole day every Friday and Saturday received for IBE classes. It was contented for the industry proficient to handle the classes without troubling their regular activities of their companies. The students are also gained more improvement and strong knowledge on IBE subjects as the revelation to only IBE subjects for the two days.



Fig.2.2.4 Photos taken during the Lecture sessions

### 2.2.5. Demonstration and Training:

The students will understand the theory contents learned on lecture modules as practical experiments at industry. This session is elucidated by actual worker from the relevant branch. Some amenities are installed inside the campus so that the students can practice repetitively on other days under the direction of institution faculty. For example, a glass wall made of different types of glass panels was erected inside the college campus by the students. The entire facility is sponsored by the industry.



Fig.2.2.5 Photos taken during the Training sessions

#### 2.2.6. Campus Placement Drive:

In the first week of March, a group of companies related with the particular IBE are visiting the campus for placement drive for two or three days. The industries are short listing the students by written test, group discussion and personal interview in-front of their respective HR teams. Some companies are organising interview through to Skype mode. Finally, it is entrusted that all the students undergone the particular IBE got placement in the related field.

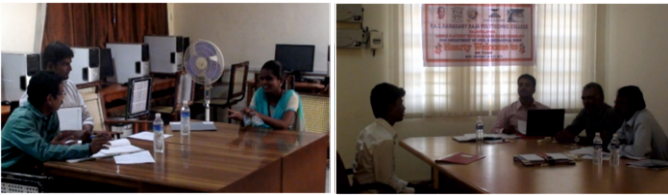


Fig.2.2.6 Photos taken during the Campus Placement Drive sessions

#### 2.2.7. Employment:

Recruited students will join their respective industry on 2nd May of the academic year. The criticism from the industries, our students are performing well with better knowledge in working areas compared to ordinary students recruited from other college and does not under gone IBE on final semester.

### 3. Outcomes

Even though there were lot of hurdles in initiating this kind of IBE system, the obtained result was found to be excellent. The students were really glad and were enthusiastically involved in the whole process of achieving the IBE system. Finally, the students who elected such type of IBEs were received good placements with high perks compared to other students. The faculty of the institutes were also came to cognizant of industrial anticipations, exposed in the trainings and will have a good liaison with industries. The institutes were also benefited by means of establishing new infrastructure sponsored by the industry, involving both industry experts in the teaching learning process and got a good rapport in the society by offering good placement records. It was a mutual benefit for both institute and industry. The industries were benefited by recruiting high skilled and perfectly trained candidates to suit their current needs. The recruited candidates can be engaged directly in the shop floor or real time projects without any additional training.

### 4. Conclusion

Because of the implementation of the above said IBE systems, the industries had employed proficient technocrats, institutes improved their modern infrastructures which could be utilized by the students and finally the IBE based proficient students came with good skills, familiar in recent trends and could be able to sustain their position in industry. CII, AICTE and some private NGOs are also involved in endorsing such type of industry institute relationships by means of offering awards, merit ratings, etc. to build a better nation.

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